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May 24, 1994

Mr. William F. Caton, Acting Secretary
Federal Communications Commission
1919 M Street NW, Room 222
Washington DC 20554

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MAY 24 1994

RE: ex parte Presentation in GEN Docket 90-314

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

Dear Mr. Caton:

This is to advise that representatives of QUALCOMM, Motorola and AT&T met today with the PCS Task Force to jointly discuss issues related to the importance of industry development of equipment standards for PCS. The presentation is summarized in the attached materials which were handed out during the discussion.

Attending for QUALCOMM were Mark Epstein and Kevin Kelly; for Motorola, Michael Kennedy; and for AT&T, Arlene Strege, Joanne Wilson and myself.

Should any questions arise, they may be directed to me.

Sincerely,

A handwritten signature in cursive script, appearing to read "F. Mathewson".

Attachment

cc: PCS Task Force Attendees (w/o attachment)

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

PCS Standards and Their Global Economic Impact

**AT&T
Motorola
Qualcomm**

Presented to:

**Federal Communications Commission
PCS Task Force**

May 24, 1994

AT&T, Motorola and Qualcomm recommend the following actions:

- 1. The FCC should strongly encourage industry standards bodies to adopt equipment standards on a timely basis.**
- 2. The FCC's equipment authorization rules should require compliance with timely developed industry standards developed by an ANSI accredited body.**
- 3. The U.S. Government should endorse North American Wireless Standards to promote world-wide export.**

PCS Standards and Their Global Economic Impact

- **Opening comments**
- **The pros and cons of PCS standards**
- **PCS within the National Information Infrastructure**
- **Standards and the global wireless market**

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Opening Comments

- **Technical standards are different from industry/business regulation**
- **There are advantages and disadvantages to standardization**
- **All standards are not the same**
- **Some degree of technical standardization is necessary to achieve U.S. goals for PCS**

How Wireless Standards Have Developed

	Interface	Implementation	Interoperability
Company → Committee	Analog AMPS CDPD IS-95		
Committee → Company	IS-54	GSM / DCS1800	IS-41

PCS Standards and Their Global Economic Impact

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One PCS Standard

Pros

- ✓ Unrestricted roaming
- ✓ User choice of operator
- ✓ Volume manufacturing
- ✓ International impact

Cons

- ✓ Restricts service diversity
- ✓ Favors established technology
- ✓ Consensus process breeds delay

No PCS Standards

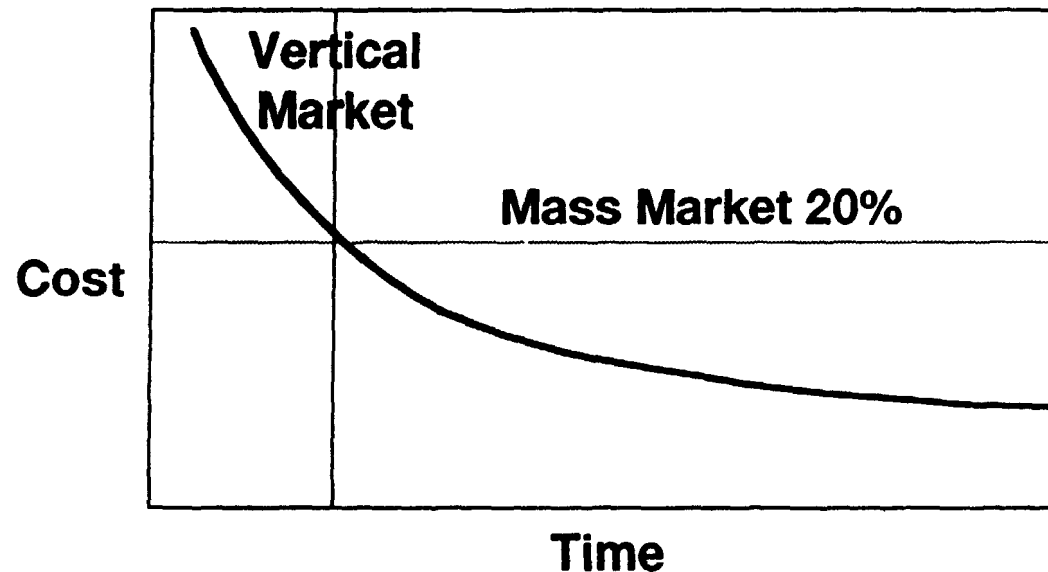
Pros

- ✓ Ultimate technology flexibility
- ✓ Faster time to market than with one standard

Cons

- ✓ No interoperability, even with the same basic technology
- ✓ Potential for many proprietary poorly documented systems
- ✓ Jeopardizes roaming
- ✓ Limits user choice of operators
- ✓ Potential abandonment of users
- ✓ Low volume manufacturing
- ✓ Diffuses U.S. impact in global wireless market
- ✓ More complex PCS/microwave co-existence
- ✓ Operator and manufacturer confusion

Typical Technology Cost Curve[†]



Learning curve (market realities)

- **Very expensive to shift**
- **Mass markets always use trailing edge technology**
- **New technologies take 15-20 years to reach the mass market**

[†] B. Goodstadt, EDS MCS. Presented at Universal Personal Communications Conference, Columbia University, May 13, 1994.

U.S. Market Penetration Rates

- **Telephones** 100%
- **TV** 100%
- **Cable** 60%
- **Video games** 40%
- **Personal computers** 30%
- **Pagers** 20%
- **Cellular phones** 15%

**A Mass Market requires 20%
household penetration**

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PCS Within The NII

According to the Computer Systems Policy Project, 1994:

“(There are) critical points in today’s infrastructure that must be interoperable if the NII vision is to be successfully implemented.”

PCS Within The NII

Categories of critical interfaces for interoperability in the NII.

1. Appliance to Network:

The interface between an information appliance and a network service provider;

2. Appliance to Application:

The applications programming interfaces (APIs) between an information appliance and emerging NII applications;

3. Application to Application:

The protocols that one NII application, service, or system uses to communicate with another application service or system; and

4. Network to Network:

The interfaces among and between network service providers.

PCS Within The NII

More from the CSPP

Government must promote competition

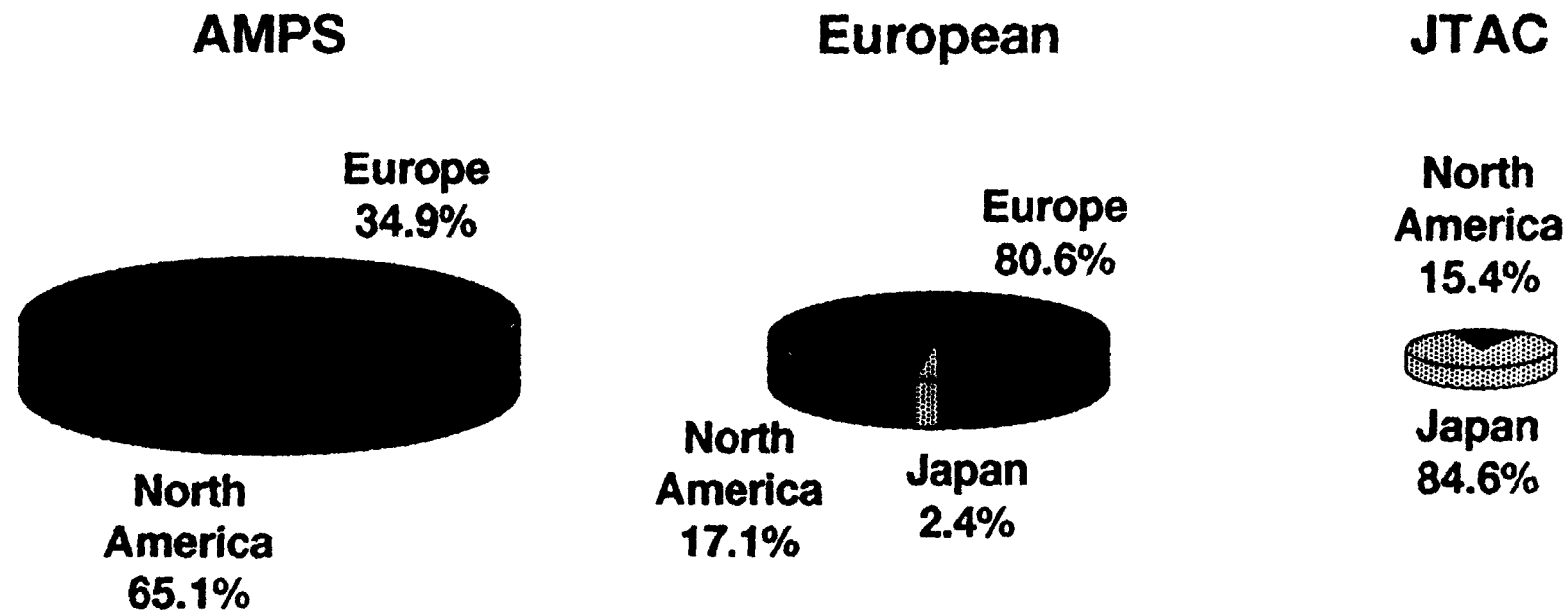
“... government policies should be designed to move the markets toward competition by encouraging market openness and interoperability. This can be achieved by eliminating barriers to entry and exit in local communications markets; requiring standardized, open interfaces to nonbundled components to enable interconnection; ...”

PCS Standards and Their Global Economic Impact

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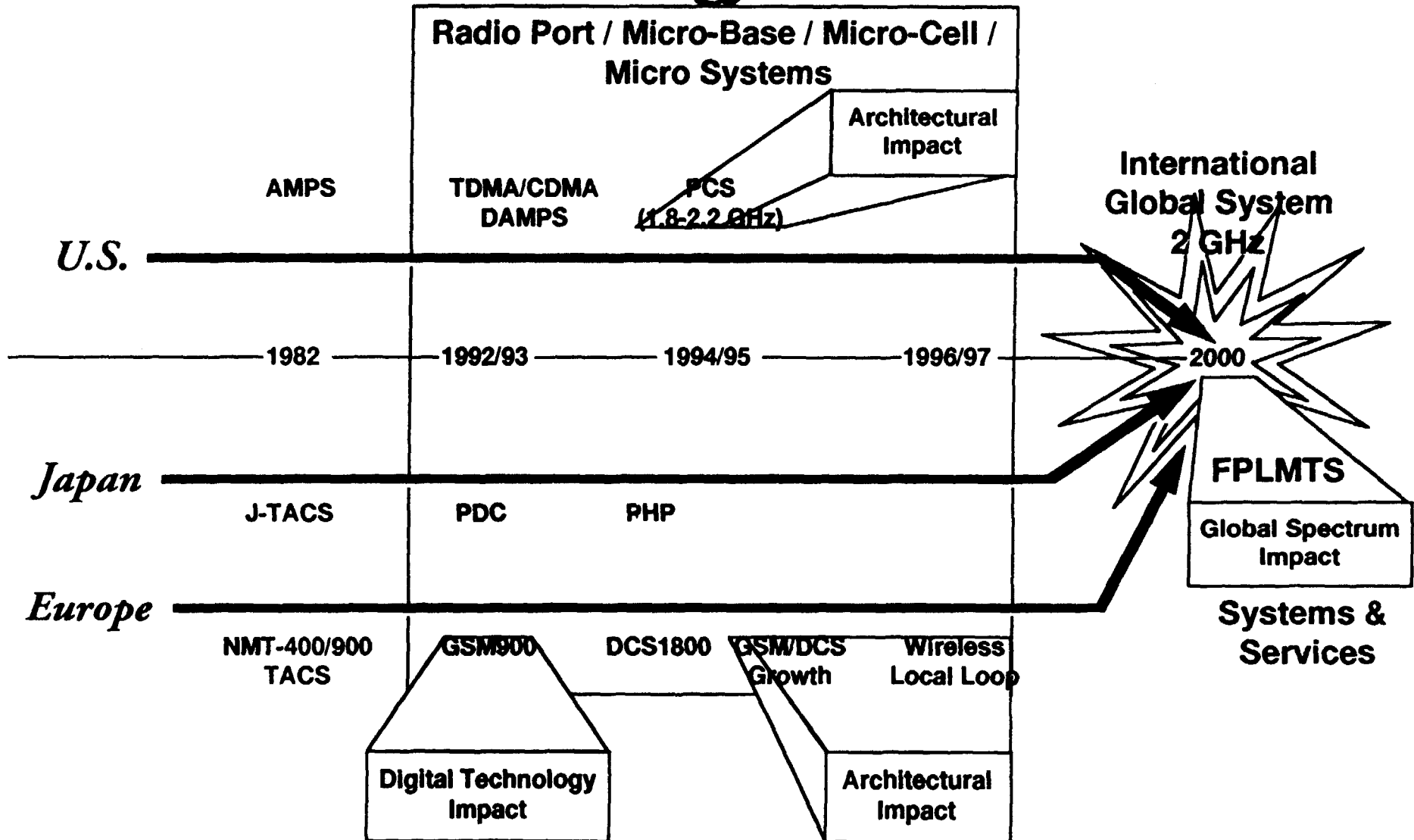
Distribution of Worldwide Cellular Market Share by Regional Standards

Based on Subscribers Served, January, 1993



Source: Ericsson and AT&T

Services And Technology



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